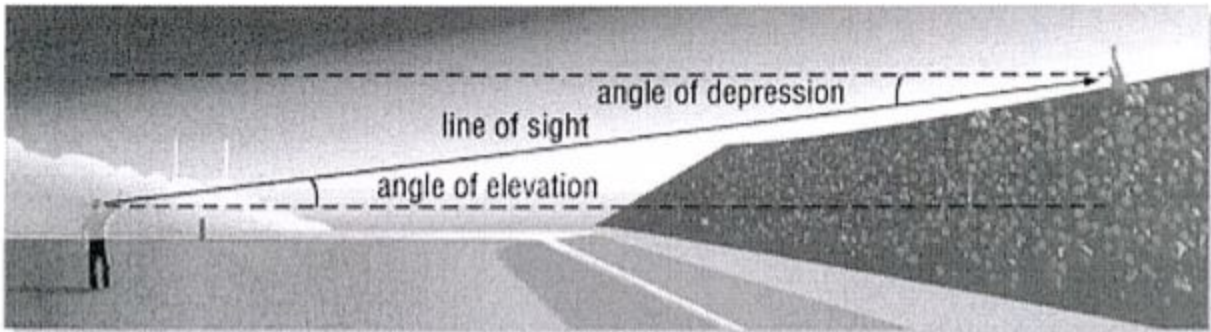


Solving Triangles

To solve a triangle means to find the _____ of all the angles and sides of the triangle.

1. Solve right triangle ABC , if $B = 28^\circ$ and $a = 25.3$ cm

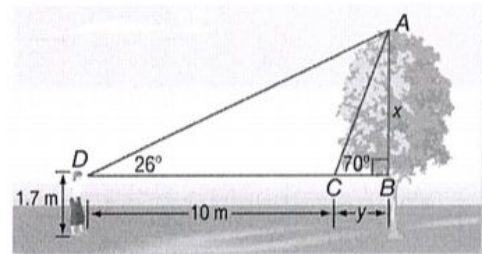
2. A tree snapped in high winds and bent over so that its top made an angle of 37° with the ground. If the top touched the ground 26 feet from the center of its base, how tall was the tree before it snapped and bent over? Give answer to the nearest tenth of a foot.



3. The angle of elevation from a point on the ground 15.5 m from the base of a tree to the top of the tree is 60.4° . Find the height of the tree.

5.4 Solutions and Applications of Right Triangles
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- Find the angle of depression from the top of a 97-ft building to the base of a building across the street located 42 ft away.
- A lifeguard is watching a beach from a line of sight 6 feet above the ground. She sees a swimmer at an angle of depression of 8° . How far away from the tower is the swimmer?
- To estimate the height of a tree she wants removed, Mrs. Long sights the tree's top at a 70° angle of elevation. She then steps back 10 meters and sights the top at a 26° angle. If Mrs. Long's line of sight is 1.7 meters above the ground, how tall is the tree to the nearest meter?

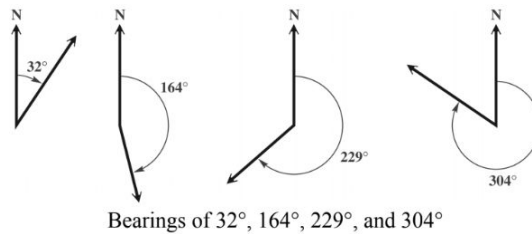


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7. Two buildings are sited from atop a 200-meter skyscraper. Building A is sited at a 35° angle of depression, while Building B is sited at a 36° angle of depression. How far apart are the two buildings to the nearest meter?

Bearing Method 1

When a single angle is given, it is understood that the bearing is measured in a clockwise direction from due north.

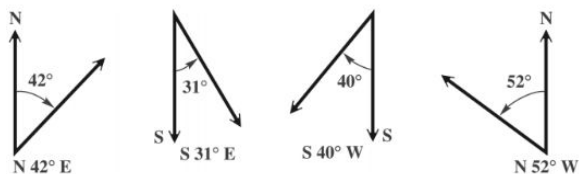


8. Radar stations A and B are on an east-west line, 8.6 km apart. Station A detects a plane at C, on a bearing of 53° . Station B simultaneously detects the same plane, on a bearing of 323° . Find the distance from B to C.

5.4 Solutions and Applications of Right Triangles
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Bearing Method 2

Start with a north-south line and use an acute angle to show the direction, either east or west, from this line.



9. A ship leaves port and sails on a bearing of $S 34^\circ W$ for 2.5 hr. It then turns and sails on a bearing of $N 56^\circ W$ for 3.0 hr. If the ship's rate of speed is 18 knots (nautical miles per hour), find the distance that the ship is from port.